

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE SPECIFICATION

The specification has been amended to reflect that parent application Serial No. 10/021,652 has matured into USP 6,721,112. Clearly, no new matter has been added, and it is respectfully requested that the amendment to the specification be approved and entered.

THE AMENDMENTS TO CLAIMS 2, 5 and 7

Claims 2 and 5 have been amended to clarify that the effective portion of the coil generates rotational torque, as supported by the disclosure in the specification at, for example, page 23, lines 5-13. Claim 5 has also been amended to correct the antecedent basis problem pointed out by the Examiner.

Claim 7 has been amended to clarify that the second side of the movable member (on which the coil is provided) is opposite to the first side (where the reflecting surface is provided). See Fig. 11.

No new matter has been added, and it is respectfully requested that the amendments to claims 2, 5 and 7 be approved and entered.

It is respectfully submitted, moreover, that amended claims 2 and 5 fully comply with the requirements of 35 USC 112, and it is respectfully requested that the rejection thereunder be withdrawn.

It is respectfully submitted that the amendments to claims 2, 5 and 7 are not related to patentability, and do not narrow the scope of the claims either literally or under the doctrine of equivalents.

THE WITHDRAWN CLAIMS

Withdrawn independent claims 11 and 21 have been amended to depend from elected independent claim 1.

In addition, claims 12, 15 and 17 have been amended along the lines of claims 2, 5 and 7, respectively, and claim 25 and 29 have been amended along the lines of claims 2 and 7, respectively.

Still further, claims 14 and 24 have been amended to depend from claims 13 and 22, respectively, to correct errors in dependency.

Yet still further, claim 26 has been amended to better accord with amended claim 21, and claim 27 has been amended to correct a minor antecedent basis problem.

No new matter has been added, and it is respectfully

requested that the amendments to the claims be approved and entered.

It is respectfully requested, moreover, that when elected independent claim 1 is allowed, claims 11-29 depending therefrom also be considered on the merits and allowed.

THE PRIOR ART REJECTION

Claims 1-4 and 6-10 were rejected under 35 USC 102 as being anticipated by USP 6,373,811 ("Ikegame et al"). However, it is respectfully submitted that the rejection of claims 8-10 set forth in the Office Action is in fact an "obviousness" rejection, and should have been made under 35 USC 103. In any event, the rejection of claims 1-4 and 6-10 is respectfully traversed.

According to the present invention as recited in independent claim 1, an optical element drive mechanism is provided which comprises a movable portion including at least an optical element having a reflecting surface. A support member supports the movable portion rotatably with respect to a fixing member, and the optical element drive mechanism comprises a drive mechanism including at least a coil and a magnet for driving the movable portion. According to independent claim 1, moreover, a pole surface of the magnet is substantially parallel to the reflecting surface of the movable portion. See attached Reference Fig. A,

which is an annotated version of Fig. 11 of the present application and shows the pole surface of the magnet being substantially parallel to the reflecting surface of the movable portion. With this structure of the claimed present invention, since the pole surface of the magnet (63 in Reference Fig. A) is arranged parallel to the reflecting surface of the mirror (65 in Reference Fig. A), the mirror 65, magnet 63 and housing 62 can be stacked along one direction, such that easy assembly of the device is facilitated.

The Examiner contends that these features of the present invention are shown in Fig. 10B of Ikegame et al. It is respectfully submitted, however, that Figs. 10A and 10B of Ikegame et al in fact shows that the pole surfaces of the magnets 112f are perpendicular to the reflecting surface of the mirror 112. Indeed, this is apparent because, with the reflecting surface perpendicular to the pole surfaces in the structure shown in Figs. 10A and 10B of Ikegame et al, magnetic flux is generated in the direction B1 in parallel to the reflecting surface of the mirror 112 (see attached Reference Fig. B, which is an annotated version of Figs. 10A and 10B of Ikegame et al). Accordingly, the magnetic flux generated in the direction B1 functions on the coils 114g, such that a force is generated in the direction F1 to incline the mirror.

By contrast, as shown with respect to attached Reference Fig. C (which is an annotated version of Figs. 10A and 10B of Ikegame et al reflecting the Examiner's interpretation), if the pole surface of the magnets 112f of Ikegame et al were parallel to the reflecting surface of the mirror 112, then the magnetic flux would be generated in the direction B2. This magnetic flux would not effectively function with the coils 114g, and it would not be possible to effectively incline the mirror.

It is respectfully pointed out, moreover, that if the pole surfaces of the magnets 112f were parallel to the reflecting surface of the mirror 112, as suggested by the Examiner, then only the N pole would be seen in Fig. 10A of Ikegame et al (since N would be facing outward, and S hidden in the view of Fig. 10A). Since both the N and S poles are shown in Fig. 10A of Ikegame et al, however, it is respectfully submitted that the magnets 112f of Ikegame et al are not oriented as suggested by the Examiner.

Accordingly, it is respectfully submitted that Ikegame et al does not disclose, teach or suggest the feature of the present invention as recited in independent claim 1 whereby a pole surface of the magnet is substantially parallel to the reflecting surface of the movable portion.

With respect to claim 3, the Examiner contends that a magnet having a pole surface with a plurality of magnetic poles is shown

in Fig. 10B of Ikegame et al. However, Fig. 10B of Ikegame et al shows a magnet with one pole at each surface, in contrast to the magnet with multiple poles provided on the pole surface according to claim 3 (see Reference Fig. A).

With respect to claim 7, it is respectfully pointed out that according to Ikegame et al the coils 114g are provided at side surfaces of the movable member, while the reflecting surface of the mirror 112 is at a front surface of the movable member. See Figs. 10A and 10B of Ikegame et al. By contrast, according to the present invention as recited in amended claim 7, the movable portion comprises the reflecting surface on a first side and the coil on a second side that is opposite to the first side. And it is respectfully submitted that this feature of the present invention as recited in amended claim 7 is not disclosed, taught or suggested by Ikegame et al.

Finally, the Examiner contends that the subject matter of claims 8-10 is obvious in view of Ikegame et al. It is respectfully pointed out, however, that according to Fig. 10B of Ikegame et al, for example, the mirror 112 is surrounded by components including the coils 114g and magnets 112f that are necessary to make the mirror 112 movable.

By contrast, the structure of the claimed present invention enables the magnet to be arranged in back of the movable part

(see Fig. 11). This structure makes possible an array of a plurality of the movable portions as recited in claim 8, which are provided integrally with respective support members, as recited in claim 9, and whereby a magnetic flux generated by the magnet is adapted to drive the plurality of movable portions, as recited in claim 10. And it is respectfully submitted that an array as recited in claims 8-10 is clearly not at all obvious in view of the disclosure of an individually provided movable part as shown in Figs. 10A and 10B of Ikegame et al, which is surrounded by components to make the movable part movable. And it is respectfully submitted that the magnets 112f in Figs. 10A and 10B of Ikegame et al clearly do not drive a plurality of movable portions, as recited in claim 10.

In view of the foregoing, it is respectfully submitted that the present invention as recited in independent claim 1 and claims 2-29 depending therefrom clearly patentably distinguishes over Ikegame et al, under 35 USC 102 as well as under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

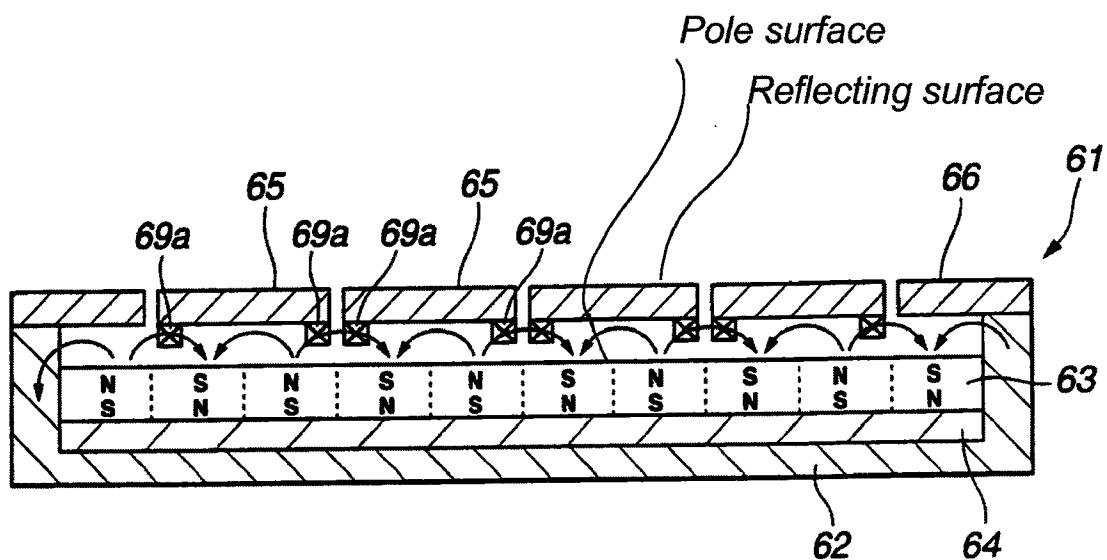
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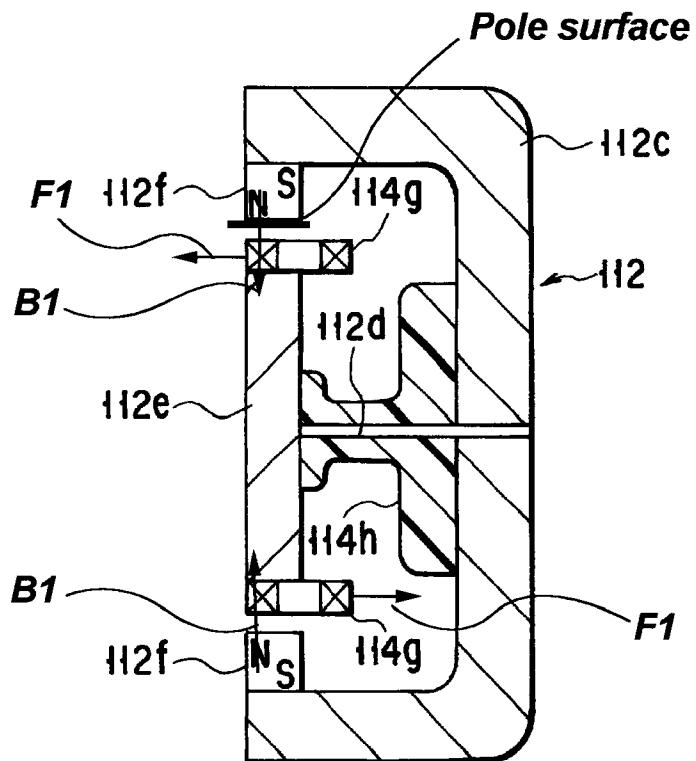
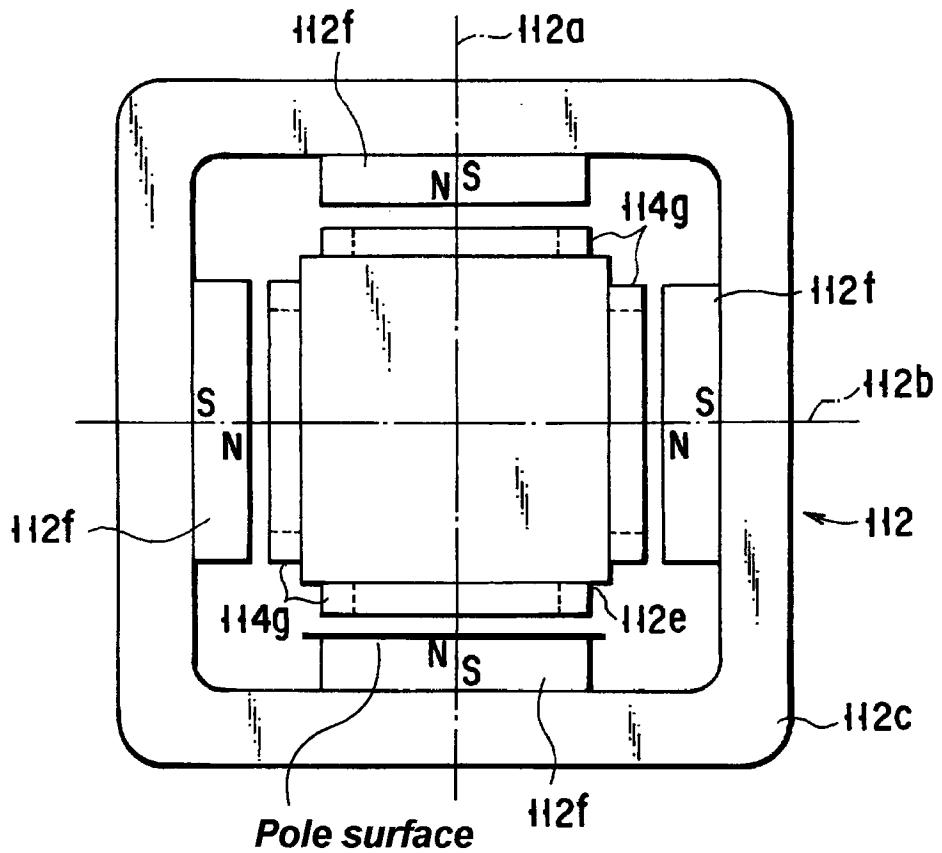
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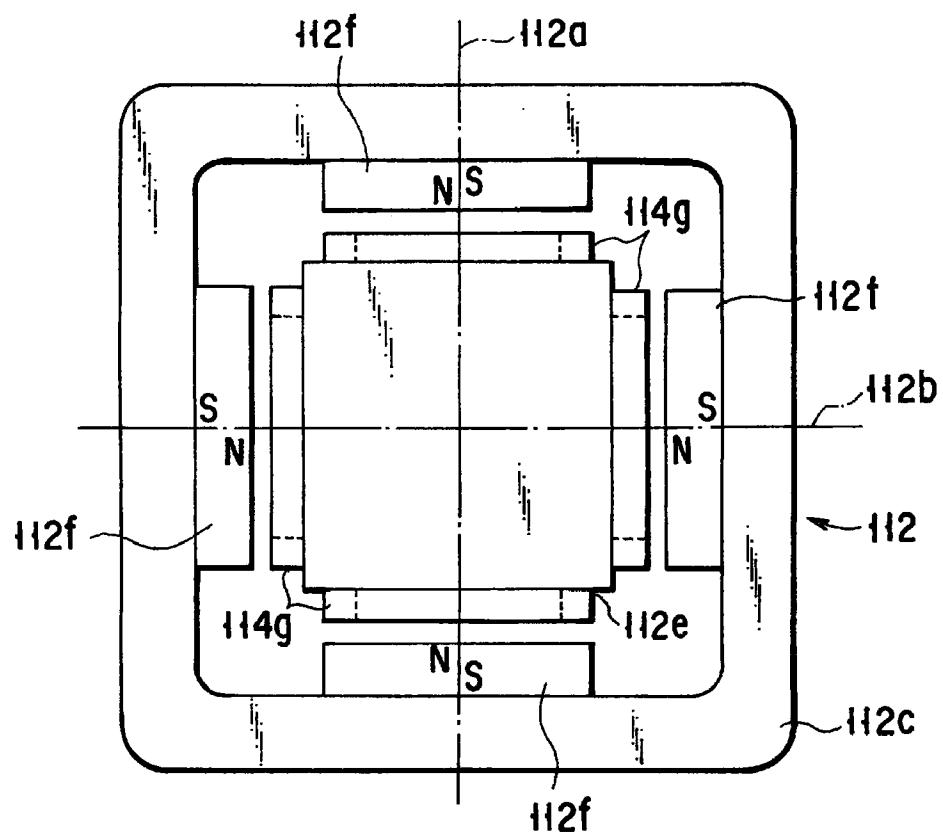
Reference Figure A



Reference Figure B



Reference Figure C



Pole Surface according to Examiner's Interpretation

